

REVISION OF THE GENUS *PLATYCOLASPIS* JACOBY
(COLEOPTERA: CHRYSOMELIDAE: CRYPTOCEPHALINAE)

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Abstract

Reid, C. A. M., 1994. Revision of the genus *Platycolaspis* Jacoby (Coleoptera: Chrysomelidae: Cryptocephalinae). *Memoirs of the Museum of Victoria* 54: 207–220.

The genus *Platycolaspis* Jacoby, hitherto placed in Eumolpinae, is redescribed in the Cryptocephalinae. This south-east Australian genus includes five species, four of which are new: *P. alpina* sp. nov., *P. australis* Jacoby, *P. lamingtonensis* sp. nov., *P. mcquillani* sp. nov. and *P. pubescens* sp. nov. The genus has affinities with *Semelvillea* Reid. Adults of *Platycolaspis* species feed on flowers of *Acacia* or on *Nothofagus* foliage.

Introduction

The genus *Platycolaspis* Jacoby was originally tentatively placed in the Colaspini, Eumolpinae, where it has remained (Seeno and Wilcox, 1982). It was described from specimens sent for identification by Lea. However other material of *Platycolaspis* seen by Lea (Museum of Victoria and South Australian Museum) includes specimens labelled by him 'allied to *Cryptocephalus pauperculus*' and 'note abdominal fovea' and it seems that Lea was aware of its affinities to the Cryptocephalinae. For placement in Cryptocephalinae, the structures of the female, the male genitalia and the case-bearing larva (not described here) are decisive.

The genus *Platycolaspis* is redescribed below and compared with other genera in the Cryptocephalinae, especially *Semelvillea* Reid. The five species are described. The relative abundance of material of four species is partly due to recent ecological surveys in Tasmania and Lamington National Park.

Methods. Dissections were made from dried material after separating the abdomen in water, soaking this in cold dilute KOH for 2–3 hr and then washing in water. The general morphology of Cryptocephalinae is typical of Chrysomelidae, but there are a few internal abdominal structures peculiar to Cryptocephalinae, which appear useful for generic or species discriminations. The male has an ejaculatory guide (Karren, 1966) for the flagellum in the median lobe of the aedeagus, which is greatly reduced in *Platycolaspis* but visible through the thin walls of the median lobe. The ovipositor is abruptly foreshortened and valvifer, coxite and stylus are fused into a single blade-like and partially transparent vaginal palp

(Erber, 1968), which may show specific differences. The female rectum shows slight differences between species but is relatively invariable at generic level. It is differentiated into dorsal and ventral halves with areas of sclerotisation on the external surface (sclerites) and sensilla and rows of teeth (forming chitinpolsters) on the inner surface. The nomenclature used here for these structures was devised by Erber (1968). The generic redescription given here includes details of head and thoracic anatomy based on dissections of *P. australis* Jacoby, *P. mcquillani* sp. nov. and *P. pubescens* sp. nov.

Plants were identified by reference to Costermans (1981).

The material used in this study is deposited at the following institutions: Australian National Insect Collection, Canberra (ANIC); Natural History Museum, London (BMNH); Bernice P. Bishop Museum, Hawaii (BPBM); Griffith University Insect Collection (GUIC); Museum of Victoria, Melbourne (NMV); South Australian Museum, Adelaide (SAM); Insect Collection, Agriculture Department of Tasmania, Hobart (TAIC); University of Queensland Insect Collection, Brisbane (UQIC).

***Platycolaspis* Jacoby**

Platycolaspis Jacoby, 1908: 27. (in Eumolpinae; type species: *Platycolaspis australis* Jacoby, by monotypy). — Clavareau 1914: 34. — Seeeno and Wilcox, 1982: 58.

Diagnosis. Cryptocephalinae (sensu stricto) of 1.4–3.0mm; antennal segments with basiconic sensilla scattered, not concentrated in apical discs; eye evenly and strongly convex, canthus not developed (Fig. 4); pronotal disc with median transverse impression, at least at sides,

and hind margin without teeth (Figs 1–3); procoxal cavities open or closed by prosternal process touching or slightly overlapping hypomerion (Figs 11–13); scutellum abruptly declined anteriorly (Figs 1–3); elytral interlocking grooves evanescent and recurved before apex; abdomen covered by elytra, at least in males; claws appendiculate (Fig. 19); tergites weakly sclerotised, soft and flexible; male with sternites V and VI fused; median lobe of aedeagus with simple apex (Figs 20, 22–27); ejaculatory guide simple, elongate–conical; spermatheca with elongate collum (Figs 33–39); kotpresse with ventral sclerite laterally extended (Figs 40–44).

Description. *Habitus* (Figs 1–3). Size 1.4–3.0 mm; body moderately cylindrical but head, prothorax and hindbody distinguishable; colour of dorsum various shades of yellowish or reddish-brown, venter similar but may be partly black; without metallic reflection; dorsum glabrous or pubescent.

Head (Fig. 4): relatively broad because of convex eyes, projecting from prothorax; vertical punctation dense, tending to rugose–strigose, interspaces c.1 puncture diameter or less; eyes evenly convex, relatively small, distance between always greater than 1.5 times eye length; inner margin of eye without canthus, straight or feebly concave; sides of clypeus divergent to apex; antennae (Fig. 7) with all segments elongate, 5–11 approximately equally long, 7–11 expanded; antennal length 0.4–0.6 body length; antennal segments with basiconic sensilla scattered, not in apical pits; labrum (Fig. 8) quadrate, with 3 or more pairs of dorsal setae and less than 10 pairs of basiconic sensilla on epipharynx; last segment of maxillary palpi simply conical to expanded at apex, with 3–4 digitiform sensilla; mandible with 2 short apical teeth, a blunt median tooth on internal edge and several short external setae; apical segment of labial palp shaped as maxillary palp.

Thorax: Prothorax (Figs 1–3, 5, 9–13): pronotum broadest at middle of sides, which are rounded to strongly angulate and only slightly contracted at apex; lateral margins of pronotum strongly bordered to explanate; disc strongly and closely punctured, with median transverse depression at least at sides; anterior corner setae set on anterior margin not on explanate border, posterior setae at corners; prosternal process quadrate to elongate, narrowed in middle (width less than 0.5 coxal cavity width) and expanded at

apex; procoxal cavity narrowly open (gap between hypomerion and prosternal process less than length of hypomerion lobe), or closed by overlap or touching of prosternal process on hypomerion; scutellum abruptly elevated from mesoscutum, elongate with slightly broader base than truncate apex, or equilateral–triangular with rounded apex; mesoscutum with neither lateral patches of microchaetae, a longitudinal median ridge nor a broad stridulatory file; elytra (Figs 1–3, 9–10, 14–15) 2.5–3.0 times length of pronotum, subparallel-sided for basal half; apex of elytral sutural locking mechanism evanescent before apex, the dorsal ridge recurved on the elytra; punctation of elytra confused or subseriate on disc; epipleuron gradually attenuate, not reaching apex, with a row of punctures; mesosternal process narrow and truncate; wing venation reduced (Fig. 16), basal marginal vein of R-cell absent or incomplete and anal area with faint indication of elongate basal cell, oval apical cell and 2 radiating veins, outermost free; metasternum not convexly swollen ventrally, sides strongly punctured, dull, disc sparsely and weakly punctured, shining; metendosternite (Fig. 17) with basal stalk narrow, as long as lateral arms, without strong median projection and without lateral lobes or lamellae; all femora of similar size, thin, without ventral keel; tibiae unkeeled and apical spurs absent; all tarsal segments (Fig. 18) relatively short and dorsally convex, segment 3 of anterior tarsus slightly transverse; claws appendiculate (Fig. 19).

Abdomen (external) (Fig. 6): tergites thin, weakly sclerotised and not reaching sternites; pleurites absent, spiracles free in basal tergites; sternites weakly and sparsely punctured, relatively shining, but transversely microsculptured; sides of sternite III ridged at base of lateral lobe, ridge 0.5–0.75 length of sternite, other sternites unridged; male sternites V and VI connate, but sternite VII not indented; females with sternites V and VI free and sternite VII with large shallow egg-hollow lacking apical indentation.

Male genitalia (Figs 20–27): median lobe shallowly curved in profile, with generally short and sparse dorsal and ventral setae; ejaculatory guide reduced to a narrow cone with central channel and basal diaphanous vesicle (difficult to distinguish); tegmen (Fig. 21) U- or V-shaped with expanded sides and truncate base.

Female genitalia and oviposition complex (Figs 28–45): vaginal palp (Figs 28–32) with apical border wholly sclerotised and rounded to slightly concave; spermatheca (Figs 33–39) with

moderately long collum and U- or slightly V-shaped receptaculum; kotpresse (Figs 40–45) with laterally expanded ventral sclerite, conspicuous and usually triangular dorsal sclerites reaching lateral margins, and no subsidiary median sclerites; dorsal anterior and posterior surfaces of rectum with weakly spined sensilla, venter without sensilla except the narrow apical band. Microsculpture consisting of short sharp triangular spines on dorsal chitinpolster, and of multispined scales on ventral chitinpolster.

Distribution and biology. The species are found in south-east Australia (Fig. 46) from Tasmania north along the Dividing Range and coastal plains to Lamington National Park, southern Queensland, and west to Mount Gambier, South Australia. They may be locally abundant but seem to have restricted adult activity periods. Host plants are recorded for two species: *P. australis* feeds on the flowers of a wide range of *Acacia* species, and *P. mcquillani* feeds on the immature leaves of *Nothofagus* species. As is typical for Cryptocephalinae (Erber, 1988), eggs

are dropped to the ground in scatoshells.

Remarks. *Platycolaspis* shows typical adult morphological attributes of Cryptocephalinae (sensu Lawrence and Britton, 1991) and the life history, with egg and larva in a scatoshell, supports this. Within the Cryptocephalinae, it shows affinity with a small group of little-known Australasian genera, including *Arnemus* Sharp, *Atenesus* Weise, *Leasia* Jacoby, and *Semelvillea* Reid (Reid, 1991).

Platycolaspis is similar to *Semelvillea*, with which it shares the following features: sutural locking mechanism evanescent before apex; male sternites V and VI connate; sides of sternite III partially ridged. It differs by: canthus absent; mid-antennal segments not obviously longer or wider than apical segments; front edge of pronotum not ridged; R-cell of wing open; third protarsal segment transverse and tarsi generally shorter and more convex; ejaculatory guide reduced to a simple conical structure; ventral rectal sclerite laterally expanded.

Key to species of *Platycolaspis*

- 1. Lateral margin of pronotum sharply angulate in middle and broadly explanate (Fig. 1); dorsum glabrous 2
- Lateral margin of pronotum weakly angulate or rounded, and narrowly margined (Figs 2–3); dorsum glabrous or pubescent..... 3
- 2. Size, ♂ 1.4–1.5 mm, ♀ 1.6–1.7 mm; elytra, c. 2.5 times length of pronotum (Fig. 10); front angles of pronotum anteriorly produced; procoxal cavities closed, by overlap of prosternal process on hypomeron *P. lamingtonensis*
- Size, ♂ 1.7–2.3 mm, ♀ 2.3–2.7 mm; elytra, c. 3 times length of pronotum (Fig. 9); front angles of pronotum not anteriorly produced; procoxal cavities open *P. australis*
- 3. Dorsum apparently glabrous (minute setae present) (Fig. 2) *P. mcquillani*
- At least pronotum conspicuously pubescent (Fig. 3) 4
- 4. Pronotum with continuous transverse impression just posterior to middle and elytral apex abruptly angled in profile (Figs 3, 15); head and pronotum rugosely punctured, with ridged interspaces; elytral setae long, erect or recurved; frontoclypeus dull, microreticulate *P. pubescens*
- Pronotum slightly depressed either side of middle and elytral apex more evenly curved (Fig. 14); punctures of head and pronotum distinct, interspaces flat; elytral setae short, recurved; frontoclypeus shining, not microreticulate *P. alpina*

Platycolaspis alpina sp. nov.

Figures 14, 28, 33, 40

Type. Holotype ♀: / Bogong Plains VIC 5000–6000 ft January 1928 F. E. Wilson / Id. by A. M. Lea *Cryptocephalus rufescens* Boh (*pauperculus* Germ.) ♂ is black / F. E. Wilson Collection / [NMV T-12501].

Diagnosis. Head and pronotum with small but conspicuous punctures, interspaces flat; pubescence on head and pronotum dense and conspicuous, on elytra short, recurved and much less conspicuous; pronotum convex, with shallow lateral median depressions; pronotum and apex of elytra evenly curved in profile.

Description (female only). Colour: yellowish-brown, with head and tarsi slightly darker and antennomeres 6–11 dark brown. Pubescence: head with short inconspicuous setae on disc, pronotum with conspicuous but adpressed curved setae arising from punctures; elytra with setae similar to pronotum but punctures much larger and sparser, therefore setae less visible; venter clearly pubescent. Size: 2.1 mm.

Head and pronotum relatively finely punctured, punctures close but separated by flat interspaces which are strongly microreticulate; eyes small but convex, interocular space about 3 times eye length; frontoclypeus shining, not microsculptured; antecna half body length, segments 7–11 slightly expanded towards apex; last segment of maxillary palp elongate–conical; explanate lateral margins of pronotum narrow, evenly rounded and tapering posteriorly; pronotum with transverse median depression shallow and separated by convex pronotal disc (Fig. 14); fore coxal cavities narrowly open, gap much less than half length of hypomerall lobe; prosternal process almost quadrate, medial width almost equal to coxal cavity length; apex of process curved.

Elytra: strongly and closely punctured, diameter of punctures more than twice pronotal punctures, confused, without longitudinal ridged intervals; epipleura at about 45° to vertical; apex of elytra evenly curved in profile (Fig. 14); scutellum equilateral–triangular with rounded apex;

Female: vaginal palp elongate–ovate (Fig. 28); spermatheca U-shaped (Fig. 33), with evenly rounded tip and relatively short straight collum; kotpresse (Fig. 40) with dorsal transverse sclerites only weakly projecting, subtriangular, ventral transverse sclerite broad, parallel-sided and projecting, but not expanded or crenulate.

Distribution and biology. Known only from the

type locality in the Victorian Alps, where it was collected in January.

Platycolaspis australis Jacoby

Figures 1, 4–6, 9, 11, 19–21, 29, 34, 41

Platycolaspis australis Jacoby, 1908: 27. — Clavareau, 1914: 177. — Lea, 1915: 102, 110.

Types. Lectotype ♂, here designated: /Type H. T./ Hobart Tas: Lea/ Lea 10336/ Jacoby Coll. 1909–28a/ *Platycolaspis australis* Jac. type/ [BMNH].

Paralectotypes (3 specimens), here designated: 2♂ 1♀ /Hobart, Tasmania/ Jacoby Coll. 1909–28a/ [BMNH].

Other material (70 specimens). Tasmania. Hobart (BMNH, SAM), Launceston (SAM), National Park (SAM).

Victoria. Belgrave (NMV), Cheltenham (NMV), 5 km S Colquhoun (ANIC), Emerald (SAM), Lakes Entrance (ANIC), Point Ricardo (ANIC), Sandringham (ANIC), Somerville (MVM), 3 km S Weeragaa (ANIC).

New South Wales. 15 km NE Batemans Bay (ANIC), Bundanoon (ANIC), 11 km E Marulan (ANIC).

Australian Capital Territory: Black Mountain (ANIC), Bulls Head (ANIC), 3 km E Piccadilly Circus (ANIC), Tidbinbilla NR (ANIC).

Diagnosis. Size, ♂ 1.7–2.3 mm, ♀ 2.3–2.7 mm; upper surface glabrous; lateral margins of pronotum strongly expanded and angulate; procoxal cavities open; length of elytra c. 3 times pronotal length; humeral elytral keel present but not sharply carinate.

Description. Colour: male with head, most of ventral surface, tarsi, femora and antennomeres 6 or 7–11 brown, rest pale brownish-yellow; female usually entirely pale brownish-yellow with darker antennae, but may be slightly darker in same areas as male, although not as dark. Pubescence: dorsum glabrous, venter with only abdomen conspicuously pubescent. Size: male 1.7–2.3 mm, female 2.3–2.7 mm.

Head and pronotum densely punctured and microsculptured, punctures deep and separated by narrow ridges; eyes convex (Fig. 1), interocular space about 2.2–2.5 times eye length; frontoclypeus dull, strongly microsculptured; antecna half body length, segments 7–11 expanded but parallel-sided towards apex and elongate; last segment of ♂ maxillary palp broadly expanded to apex, ♀ parallel-sided; explanate lateral margins of pronotum (Figs 1, 9) broad and sharply angled in middle, front angles not anteriorly produced; pronotum with continuous transverse median depression; fore coxal cavities (Fig. 5, 11) clearly open, but gap less than half length of hypomerall lobe; prosternal process elongate and narrow, medial width much less than half coxal

cavity length; apex of process curved and slightly produced.

Elytra (Figs 1, 9): elongate, length c. 3 times pronotum; strongly and closely punctured, densely and finely around scutellum with interspaces only weakly convex, subseriate on disc; raised interstice from shoulder to apex prominent, but evenly convex, not sharply ridged; epipleura almost horizontal; apex of elytra abruptly sloped in profile; scutellum elongate, length > 1.3 times width.

Male: median lobe (Fig. 20) narrow and ventral and dorsal surfaces evenly curved in profile; apex broadly but weakly mucronate, with four long dorsal setae, approximately 0.25 width of median lobe, and scattered shorter setae.

Female: vaginal palp (Fig. 29) rhomboid with rather pointed tip; spermatheca (Fig. 34) U-shaped with a pointed tip and elongate collum; kotpresse (Fig. 41) with dorsal transverse sclerites subtriangular but extended and crenulately expanded, laterally, ventral transverse sclerite lengthened medially and strongly extended and crenulately expanded, laterally.

Distribution and biology. *Platycolaspis australis* is widespread from the tablelands and adjacent coast near Goulburn, to Melbourne and eastern Tasmania. Adults are present from August to October and feed on *Acacia* flowers. The following hosts have been recorded: *A. baileyana* Muell., *A. dealbata* Link, *A. longifolia* (Andr.) Willd., *A. mucronata* Willd. ex Wendl., *A. obtusata* Sieb. ex DC., *A. pycnantha* Benth., *A. terminalis* (Salisb.) Macbr. This list includes bipinnate and phyllodinous species, and it seems likely that any *Acacia* flowering from August to October will be a suitable host. The adult beetles burrow into individual flower heads and their yellowish colouration appears to be suitably cryptic for this purpose.

Remarks. Jacoby (1908) did not specify the number of specimens he examined, but more than one specimen is indicated from the species description. The male specimen from Hobart in BMNH with Jacoby's 'type' label is hereby designated lectotype. The three remaining specimens from Hobart in Jacoby's collection are designated paralectotypes.

Platycolaspis lamingtonensis sp. nov.

Figures 10, 24, 30, 35, 42

Types. Holotype: ♂ / Lamington NP QLD, O'Reilly's, 28° 14'S 153° 00'E, pyrethrum fogging rainforest, Dec 1991, DR [*Dysoxylum rufum*] 55, R. L. Kitching/ (ANIC).

Paratypes (7 specimens): 3♂, 3♀, same data as holotype except code nos DR51, DR3.6, SG [*Synoum glandulosum*] 3, SG6 (ANIC, GUIC); 1♂, as above except 4.Dec.1991, DR4 (ANIC).

Diagnosis. Size, ♂ 1.4–1.5 mm, ♀ 1.6–1.7 mm; upper surface glabrous; lateral margins of pronotum strongly expanded and angulate; procoxal cavities closed; length of elytra c. 2.5 times pronotal length; humeral elytral keel sharply carinate.

Description. Colour: male with abdomen, tibiae, tarsi, and antennomeres 7–11 dark brown to black, rest yellowish- or reddish-brown, head generally somewhat darker; female entirely yellowish-brown, head may be slightly darker. Pubescence: dorsum glabrous, venter with only abdomen conspicuously pubescent. Size: male 1.4–1.5 mm, female 1.6–1.7 mm.

Head and pronotum densely punctured and microsculptured, punctures deep and separated by narrow ridges; eyes convex, interocular space about 2.3–2.5 times eye length; frontoclypeus weakly shining but microsculptured; antenna about 0.4 body length, segments 7–11 expanded towards apex and slightly elongate; last segment of maxillary palp broadly expanded to apex in ♂, parallel-sided in ♀; explanate lateral margins of pronotum (Fig. 10) broad and sharply angled in middle, very narrow behind this, front angles strongly anteriorly produced; pronotum more convex than in *P. australis*, with continuous transverse median depression; fore coxal cavities closed; prosternal process elongate and narrow, medial width less than half coxal cavity length; apex of process curved.

Elytra (Fig. 10): short, length c. 2.5 times pronotum; strongly and closely punctured, densely and finely around scutellum with interspaces strongly convex, subseriate on disc; raised interstice from shoulder to apex prominent and sharply ridged; epipleura almost horizontal; apex of elytra abruptly sloped in profile; scutellum slightly elongate to quadrate, length < 1.3 times width.

Male: median lobe (Fig. 24) narrow and ventral and dorsal surfaces almost evenly curved in profile; apex right-angled with blunt tip, with four long dorsal setae, approximately 0.25 width of median lobe, and scattered shorter setae.

Female: vaginal palp (Fig. 30) ovate-rhomboid with rounded tip; spermatheca (Fig. 35) asymmetrically U-shaped with a pointed tip and elongate collum; kotpresse (Fig. 42) with dorsal transverse sclerites transverse, feebly extended and

not crenulately expanded, ventral transverse sclerite parallel-sided, laterally extended but not crenulately expanded.

Distribution and biology. *Platycolaspis lamingtonensis* is confined to the type locality, Lamington National Park, 800 km north of any other species of *Platycolaspis*. The collection site is subtropical rainforest at c. 950 m altitude, and all available material was taken by fogging the rainforest trees *Dysoxylum rufum* (Rich.) Benth. and *Synoum glandulosum* (Smith) Juss. (both Meliaceae).

Platycolaspis mcquillani sp. nov.

Figures 2, 7, 8, 12, 16–18, 25–27, 31, 36, 43

Types. Holotype: ♂ / 41°50'S 146°03'E Pelion Hut, 3 km S Mt Oakleigh TAS, 860 m 30.Nov.1990–8.Jan.1991 E. Nielsen, E. Edwards malaise no. 5, closed forest/ (ANIC).

Paratypes (89 specimens, all Tasmania): 15, same data as holotype (ANIC); 21, same data as holotype, except 8.Jan–12 Feb.1992, A. Calder and W. Dressler (ANIC, SAM); 1, as above except, FIT no 1 (ANIC); 1, as above except, malaise no 2 (ANIC); 4, as above except, 30.Nov.1990–8.Jan.1991, E. Nielsen and E. Edwards, malaise no 4; 2, as above except, malaise no 2; 1, as above except 28–30.Nov.1990, T. Weir, beating *Nothofagus* (ANIC); 1, as above except, on grass and low vegetation (ANIC); 1, as above except, 12–15.Feb.1991, A. Calder and W. Dressler, sweeping grass tufts (ANIC); 4 / 41°52'S 146°03'E 2 km NNE Mt Ossa, 1000 m, 30.Nov–8.Jan.1991, E. Nielsen and E. Edwards, FIT no 3/ (ANIC); 10, / 41°51'S 146°03'E 4 km S Mt Oakleigh, 880 m, 30.Nov–8.Jan.1991, E. Nielsen and E. Edwards, malaise no 3/ (ANIC); 2, / Hartz Mtns NP 800 m on *Noth. cunninghamii* 7.Dec.1986 P. B. McQuillan / (ANIC); 2 ♂, 6 ♀ 42°39'S 146°34'E 0.5 km NW Lake Webster, Mt Field NP on *Noth. cunninghamii* 920 m 7.Feb.1992 C. Reid/ (ANIC); 10 ♂, 8 ♀ / 42°40'S 146°41'E 2.5 km W National Park, Mt Field NP, on *Noth. cunninghamii*, rainf., 600 m, 6.Feb.1992 C. Reid/ (ANIC).

Other material examined. 4 ♂, 5 ♀ / 42°39'S 146°33'E W side Walker Tarn, Mt Field NP TAS on *Noth. gunni* 1140 m 7.Feb.1992 C. Reid/ (ANIC).

Diagnosis. Entire upper surface glabrous or minute setae visible at apex of elytra; sides of pronotum not angulate; procoxal cavities closed or apparently so; prosternal process broad, medial width at least half procoxal cavity length.

Description. Colour: male entirely yellowish- to reddish-brown except abdomen, tarsi and palpi dark brown to black and antennal segments 6–11 and apex of 5 black; venter of thorax, base of femora and sides of head may also be dark brown to black; female entirely yellowish- or reddish-brown, except palpi and antennae as male. The

9 specimens from Walker Tarn are generally darker brown, and more extensively black ventrally. Pubescence: dorsum glabrous, but with minute stubs of setae in punctures, venter with short but conspicuous pubescence. Size: male 1.7–2.4 mm, female 2.3–2.8 mm. The Walker Tarn specimens are generally larger: male 2.25–2.4 mm, female 2.8–3.0 mm.

Head and pronotum densely punctured and microsculptured, punctures deep, with narrow convex interspaces; interocular space about 2–2.5 times eye length; frontoclypeus shining but shallowly microsculptured; antenna (Fig. 7) slightly more than half body length, segments 6–11 expanded towards apex, slightly more elongate in the Walker tarn specimens; last segment of maxillary palp slightly contracted to truncate apex; explanate lateral margins of pronotum (Fig. 2) distinct, evenly curved to broad front-angles; pronotum with transverse median depression continuous or rarely divided by narrow median convexity; fore coxal cavities (Fig. 12) closed by overlap or touching of prosternal process on hypomeral lobe; prosternal process slightly elongate, medial width 0.5–0.75 coxal cavity length; apex of process curved.

Elytra (Fig. 2): strongly and closely punctured, subseriate, with about 5 irregular shallow longitudinal ridges, including raised, evenly convex, interstice from shoulder; epipleura at c. 45° to vertical; apex of elytra abruptly sloped in profile; scutellum equilateral-triangular with rounded apex;

Male: aedeagal median lobe (Figs 25–27) relatively thick with evenly curved dorsal surface and produced apex in profile; apex broadly but strongly mucronate, with about 15–20 scattered short dorsal setae, 0.2 or less width of median lobe (size and distribution of setae variable).

Female: vaginal palp (Fig. 31) ovate with angular basal margin and broadly rounded tip; spermatheca (Fig. 36) broad U-shaped, with elongate, strongly reflexed collum; kotpresse (Fig. 43) elongate-triangular dorsal transverse sclerites narrowly laterally prominent, ventral sclerite slightly lengthened medially and expanded but only weakly prominent at sides.

Distribution and biology. This species is only known from three areas in Tasmania where it feeds on new foliage of *Nothofagus cunninghamii*. The Walker Tarn specimens were feeding on young foliage of *N. gunni*. All specimens were taken at moderate to high altitude (600–1140 m).

Remarks. The specimens from Walker Tarn differ in size and, to a lesser extent, colour from all other material, as described above. These specimens were also taken on a different foodplant (*N. gunni*) and at a higher elevation (1140 m; other specimens 600–920 m). I have not been able to detect any obvious constant differences in external or genital morphology between the Walker Tarn specimens and the other material available, and therefore prefer to regard all this material as belonging to *P. mcquillani*, but exclude the Walker Tarn specimens from the type series.

Platycolaspis pubescens sp. nov.

Figures 3, 13, 15, 22, 23, 32, 37–39, 44, 45

Types. Holotype ♂: 42°06'S 146°10'E Lake St. Clair 750 m TAS 25–27 Jan 1980, Lawrence and Weir / Pyrethrum spray tree ferns / [ANIC].

Paratypes (54): Tasmania: 1 ♂ / 42°10'S 146°07'E 4 km SSE of Mt Rufus 800 m, 26–28 Jan 1980, Lawrence and Weir / by beating / [ANIC]; 1 ♀ / 2.5 km W National Park, Mt. Field, 42°40'S 146°41'E, *Noth. cunninghamii*, rainf. 600 m 6 Feb. 1992, C. Reid (ANIC); 1 ♂ / Hartz Mts NP Hartz Rd 740 m 8–10 Feb. 1980 *Euc.* — *Nothofagus* A. Newton M. Thayer / pyrethrin fogging *Nothofagus cunninghamii* bark / [ANIC]; 2 / 41°50'S 146°03'E Pelion Hut, 3 km S Mt Oakleigh 860 m 30 Nov. 1990–8 Jan. 1991 E. Nielsen, E. Edwards malaise no. 5, closed forest / (ANIC); 1, as above except, 8 Jan–12 Feb. 1991, A. Calder and W. Dressler, malaise no 1 (ANIC); 2, as above except, malaise no 5 (ANIC); 1 / 41°51'S 146°03'E 4 km S Mt Oakleigh, 880 m, 30 Nov–8 Jan. 1991, E. Nielsen and E. Edwards, malaise no 3, closed forest / (ANIC); 2 / Hartz Mts NP 800 m on *Noth. cunninghamii* 7 Dec. 1986 P. B. McQuillan / (ANIC); 1 ♂ / 42°10'S 146°08'E 9 km WSW Derwent Bridge 21 Jan 1983 I. Naumann, J. Cardale / [ANIC]; 1 ♂ / Tasmania Simson / [SAM]; 6 / Tasmania Simson / 3802 / [SAM]; 2 / Tasmania Blackburn / 3802 / [SAM]; 10 / Mt Wellington Tas: Lea / [SAM]; 2 / Mt Wellington Tas: Lea / moss / el. distinctly pubesc. distings. from 10336 / [SAM]; 1 / Waratah Tas: Lea / [SAM]; 6 / King I. Tas: Lea / 10941 / probably n. g. of eumolpids [t?] Jacoby / note abd. fovea of specimen in front of pin / [SAM]; 2 / Launceston 3 Nov. 94 / [SAM]; 2 / King I., ? partly abraded 10941 / [SAM]; 3 / Launceston Tas: Lea / (TAIC).

Victoria: 1 ♂ / 37°34'S 145°53'E Cumberland Ck 13 km ESE Marysville 18 Jan 1978 V. Lawrence and Weir / by beating / [ANIC]; 1 ♂ 1 ♀ / Barwon Heads 4 Nov. 44 E. Smith / [NMV]; 2 / Nelson, V. Blackburn / [SAM].

South Australia: 1 / Mt Gambier S. Australia Lea / [SAM]; 1 / Mt Gambier S. Australia Lea / *Platycolaspis australis* Jac. / [SAM].

Diagnosis. Head and pronotum covered in close recumbent pubescence, erect or recurved and in rows on elytra; head and pronotum densely, rugosely punctured, interspaces ridged; pronotum with single transverse depression across

middle; explanate margins of pronotum narrow, slightly angled; procoxal cavities closed in ventral view; apex of elytra abruptly declined in side view.

Description. Colour: ground colour yellowish-brown, most specimens with elytra vaguely darkened around scutellum and obliquely across apical half; palpi yellowish-brown to brown; male antennal segments 6–11, tarsi, middle of femora, abdomen and metathorax blackish-brown, head reddish-brown; female paler, with yellowish-brown tarsi, but may have blackish-brown metathorax. Pubescence: head and pronotum densely pubescent with long recumbent setae, elytra with setae arranged in 5–6 rows on each elytron with scattered setae on intervals, elytral setae either erect or recumbent; venter pubescent. Size: male 1.6–2.0 mm; female 2.0–2.5 mm.

Head and pronotum (Fig. 3) densely but finely punctured and strongly microsculptured, punctures separated by narrow ridges; eyes large and convex, interocular space about twice eye length; frontoclypeus dull, strongly microsculptured (1 specimen from King Island with shining frontoclypeus); antenna half body length, segments 7–11 expanded towards apex; last segment of male maxillary palp broadly expanded to apex, in female parallel-sided with truncate apex; explanate lateral margins of pronotum distinct, evenly curved to slightly angulate at midpoint and broad at front angles; pronotum with continuous transverse median depression (Fig. 15); fore coxal cavities (Fig. 13) closed by overlap or touching of prosternal process on hypomeral lobe; prosternal process quadrate to slightly elongate, medial width almost coxal cavity length; process angulate to triangularly pointed at apex.

Elytra (Figs 3, 15): strongly and closely punctured, subseriate, diameter of punctures more than twice pronotal punctures; with about 5 irregular shallow longitudinal ridges, including raised interstice from shoulder, or these ridges absent; epipleura at 45° to vertical; apex of elytra abruptly sloped in profile; scutellum equilateral-triangular, with rounded apex.

Male: aedeagal median lobe (Figs 22–23) in profile with a prominent convexity on dorsal surface, a third from apex; ventral surface almost straight; apex almost right-angled with blunt tip, and with 10–12 scattered setae, 4 longer, c. 0.2 width of median lobe.

Female: vaginal palp (Fig. 32) ovate to elongate-ovate, with broadly rounded tip; spermatheca (Figs 37–39) variable, but slightly V-shaped, usually with recurved tip and collum oblique

from base; kotpresse (Figs 44–45) dorsal transverse sclerites variably triangular, only slightly laterally prominent, ventral sclerite almost parallel-sided, laterally prominences variably crenulate.

Distribution and biology. This species is recorded in south-eastern Australia from Mount Gambier to Marysville, Tasmania (where it is predominantly western) and King I., and has been collected in November, January (most records) and February.

No hosts are recorded. It may feed on *Acacia* flowers, like *P. australis*, but it is frequently collected in association with *Nothofagus cunninghamii* and is a much duller brown species than *P. australis*. However the range of *P. pubescens* extends well beyond the range of *N. cunninghamii*, which is absent from west Victoria.

Remarks. This is variable and it has been difficult to determine whether one or two species are represented in the material to hand. I have dissected specimens from Barwon Heads, Derwent Bridge, King I., Launceston, Mt Rufus and Mt Wellington. These specimens vary slightly in colour, elytral pubescence, shape of lateral pronotal margins, development of elytral ridges and shape of spermatheca. Males from all localities have the prominent swelling on the dorsal surface of the median lobe, which is considered to be diagnostic for the species.

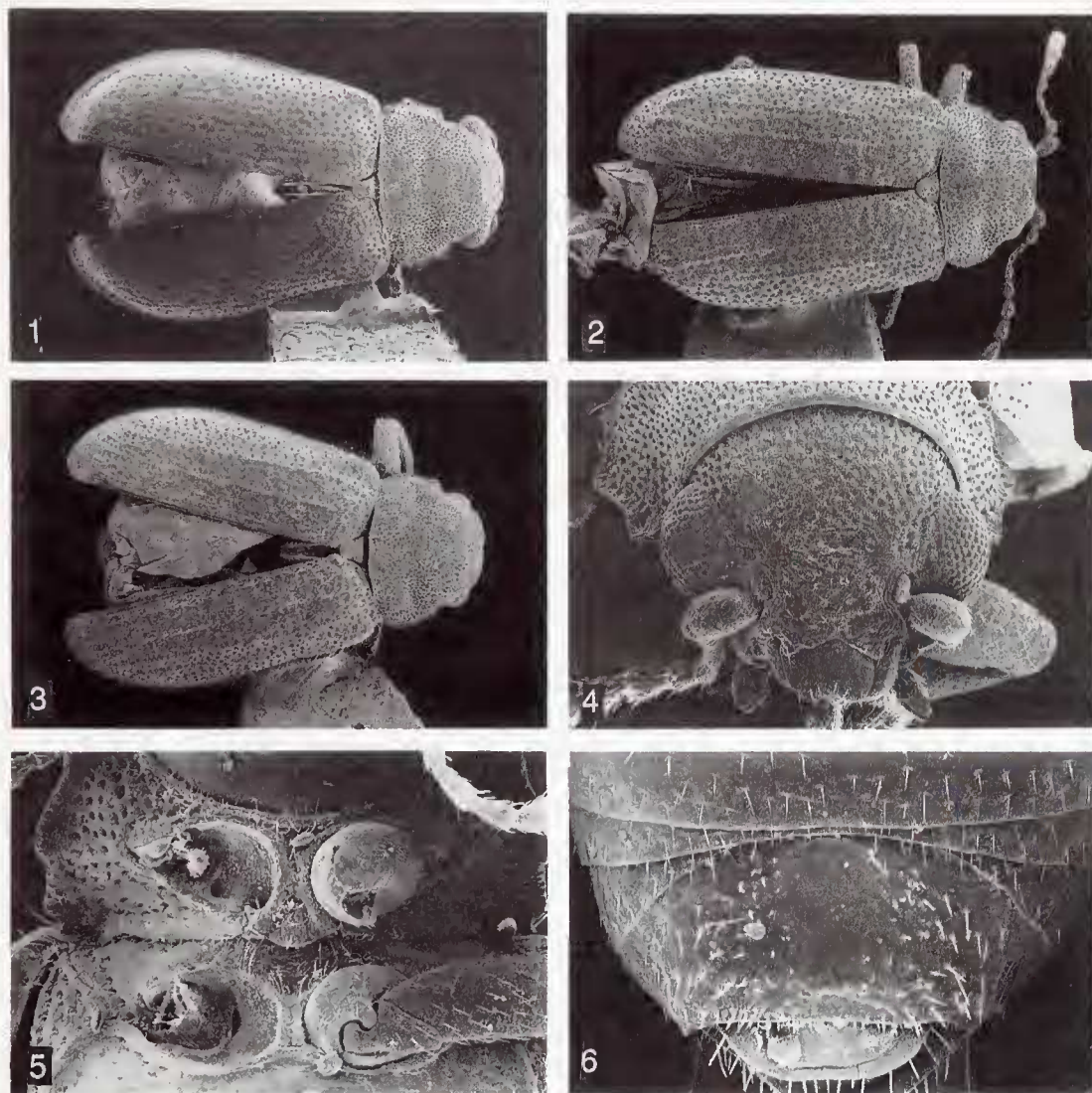
Acknowledgements

I thank the following curators for the loan of material in their care: John Lawrence (ANIC), Eric Matthews (SAM), Peter McQuillan (TAIC), Margaret Schneider (UQIC), Sharon Shute (BMNH), and Ken Walker (NMV). Roger Kitching (Griffith University) allowed me to use

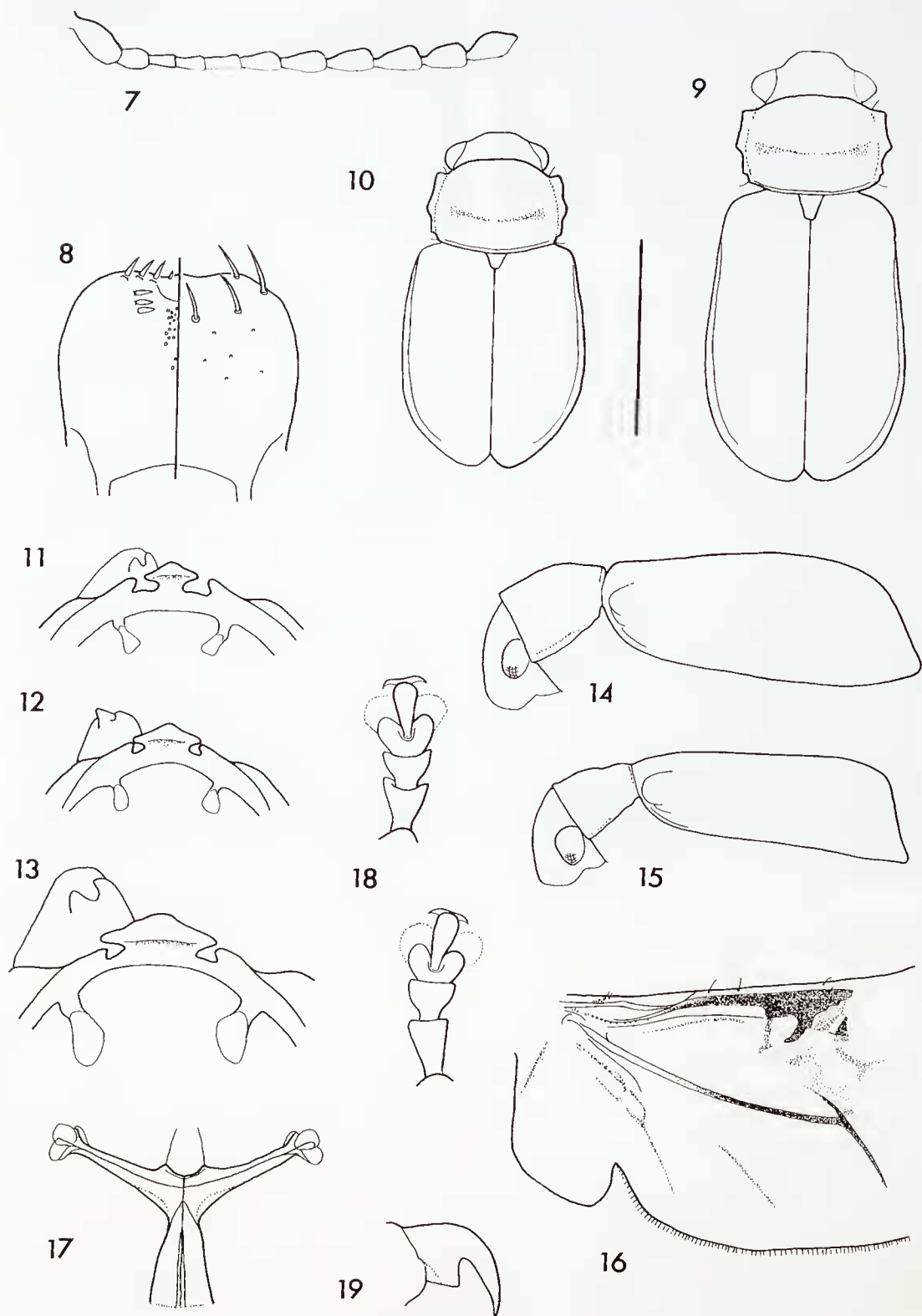
the series of specimens from Lamington NP. Kathy Pickerd, Helen Geier (CSIRO) and Keith Herbert (ANU) helped with the SEM photography, and Peter Cranston (CSIRO), Penny Gullan (ANU) and John Lawrence gave helpful criticism of the manuscript. This work was supported by a grant from the Australian Biological Resources Study and the use of facilities at the Australian National Insect Collection, CSIRO, Canberra.

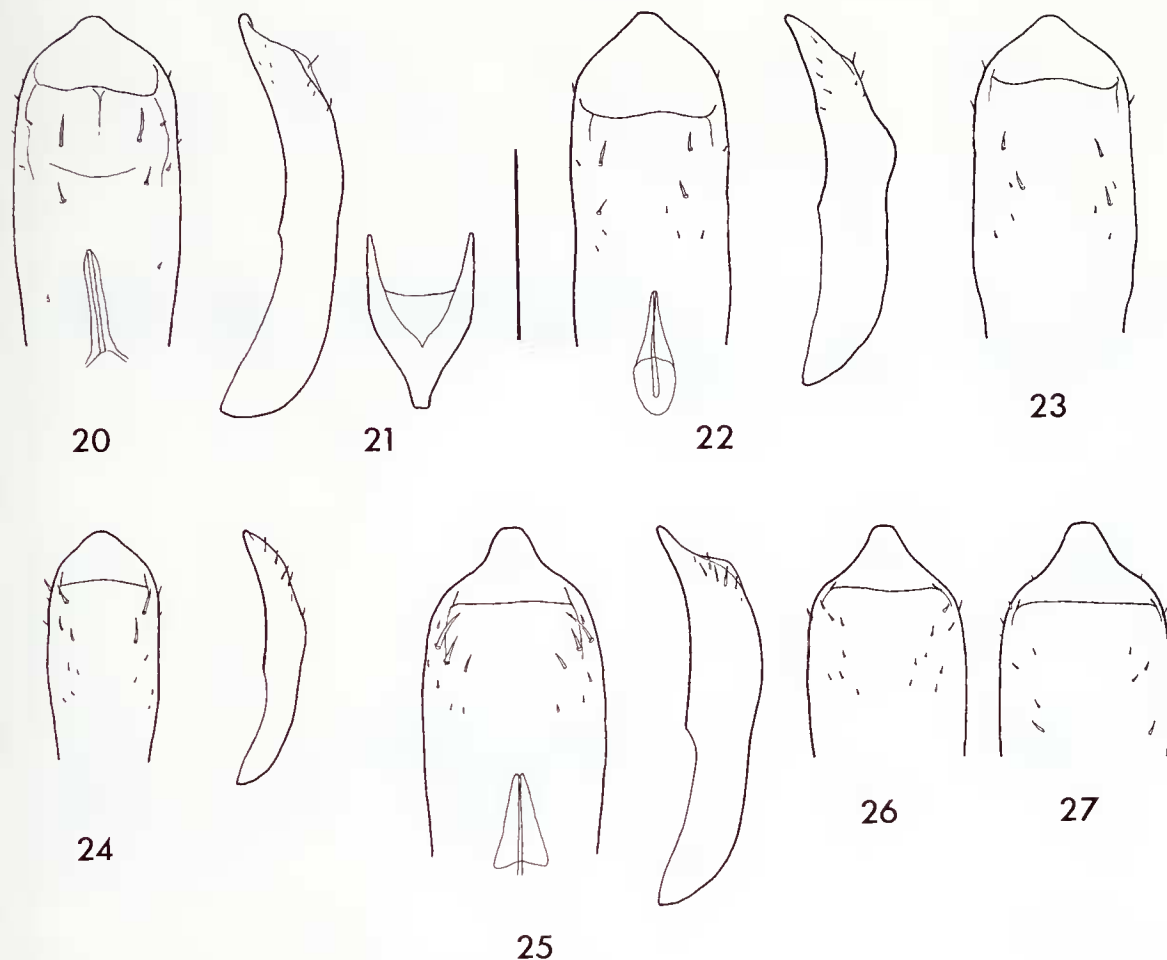
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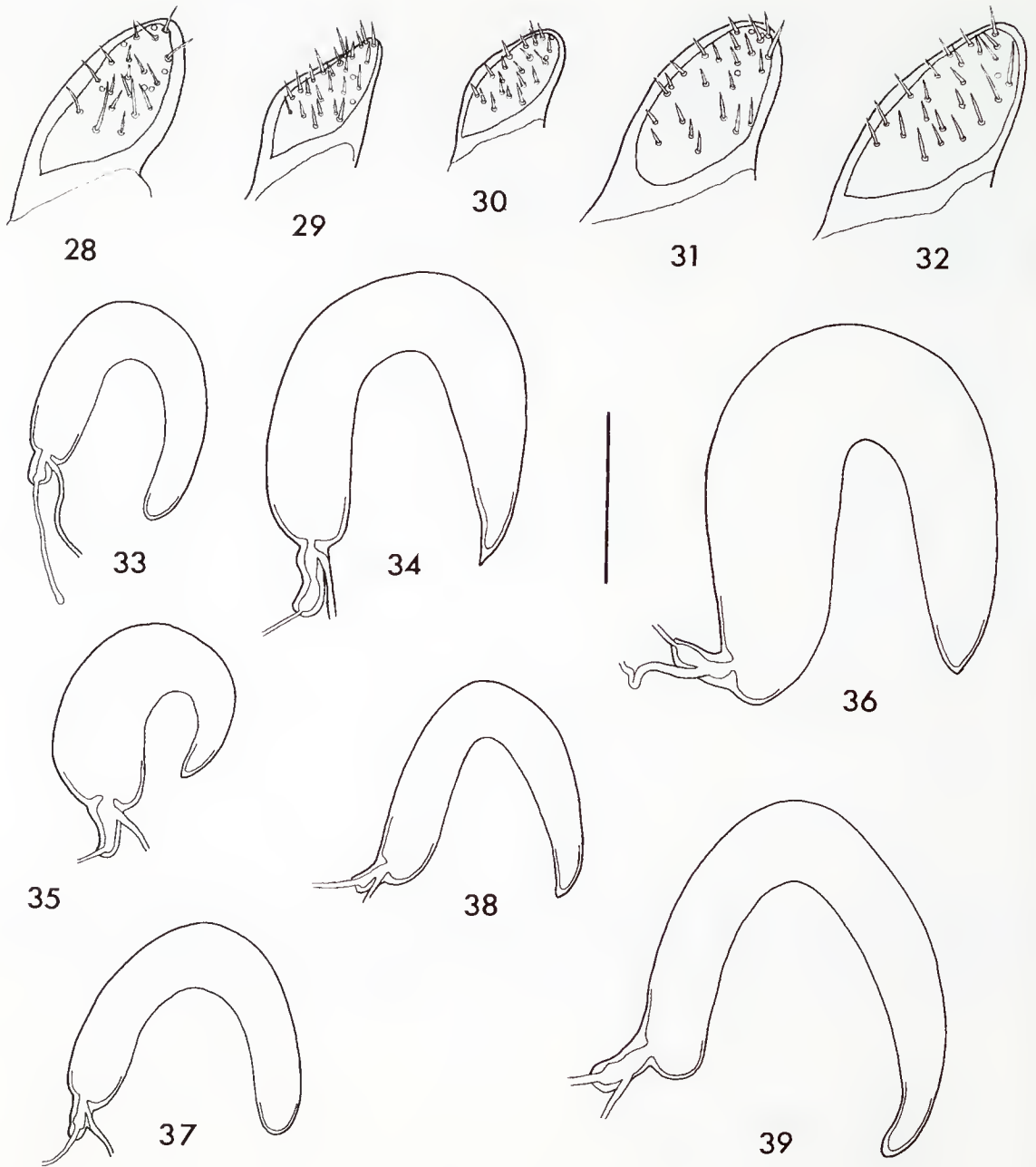
Figures 1–6. *Platycolaspis* spp. male habitus of *P. australis* (1), *P. mcquillani* (2) and *P. pubescens* (3); *P. australis*, male head (4), female venter of thorax (5), female apex of abdominal venter (6).



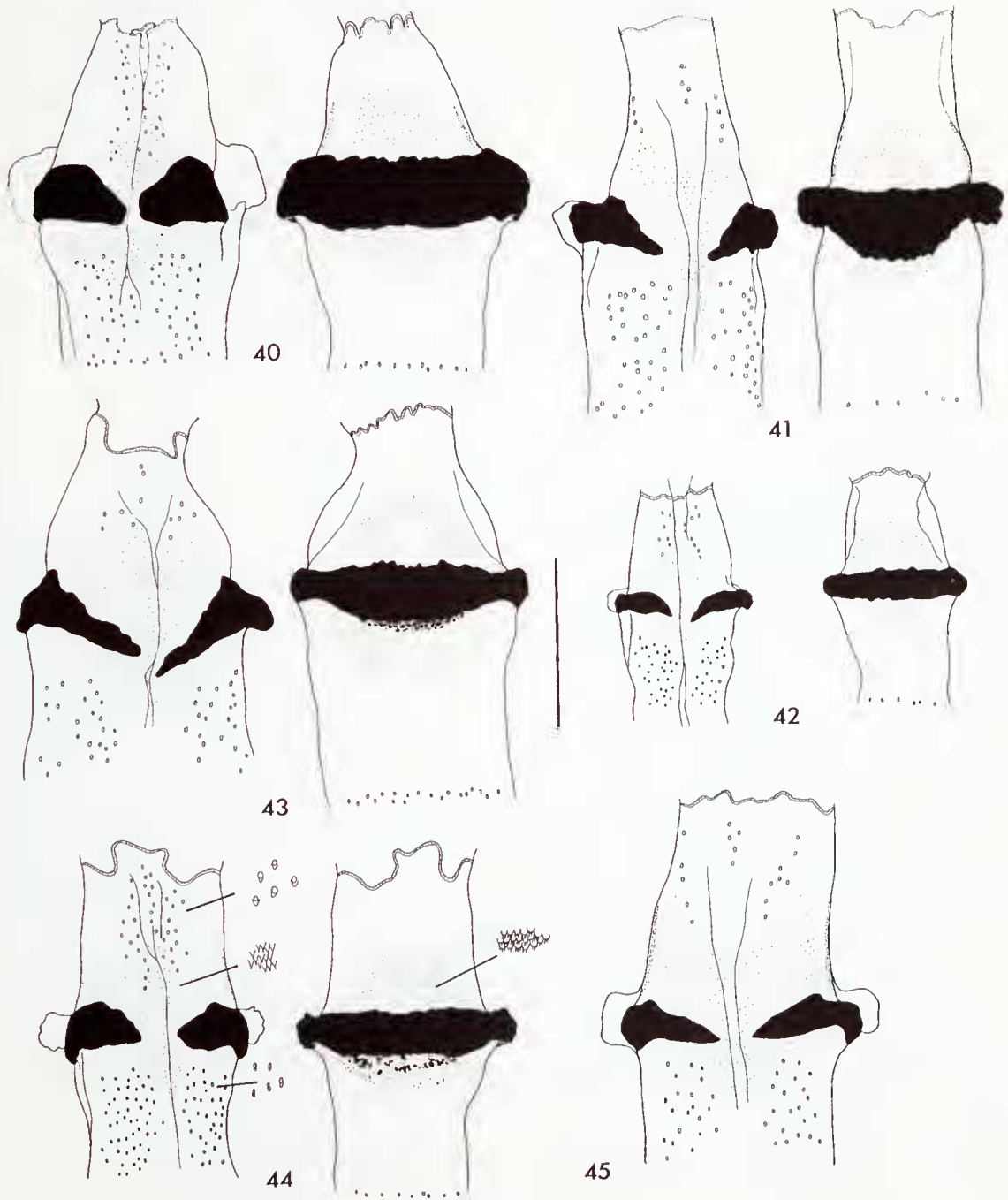


Figures 20–27. Aedeagus of *Platycolaspis* spp. Median lobe, dorsal and lateral, or dorsal only, of *P. australis* (20), *P. pubescens*, Launceston (22), *P. pubescens*, Barwon Heads (23), *P. lamingtonensis* (24), *P. mcquillani*, Pelion Hut (25), *P. mcquillani*, Mount Field, *Nothofagus cunninghamii* (26), *P. mcquillani*, *Nothofagus gunni* (27); tegmen of *P. australis* (21). Scale = 0.1 mm (dorsal view), 0.25 mm (lateral and tegmen).

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 Figures 7–19. *Platycolaspis* spp. Antenna (7) and labrum, epipharynx left, dorsum right (8) of *P. mcquillani*, Pelion Hut; male dorsum of *P. australis* (9) and *P. lamingtonensis* (10); posterior view of prothoracic venter of *P. australis* (11), *P. mcquillani* (12) and *P. pubescens* (13); dorsal profile of *P. alpina* (14) and *P. pubescens* (15); basal half of wing of *P. mcquillani* (16); metendosternite of *P. mcquillani* (17); male fore (top) and hind tarsus of *P. mcquillani* (18); claw of *P. australis* (19). Scale = 1.0 mm (9, 10, 14, 15), 0.8 mm (16), 0.4 mm (7, 11–13, 17, 18), 0.125 mm (8), or 0.1 mm (19).



Figures 28–39. *Platycolaspis* spp. Left vaginal palp of *P. alpina* (28), *P. australis* (29), *P. lamingtonensis* (30), *P. mcquillani* (31) and *P. pubescens* (32); spermatheca of *P. alpina* (33), *P. australis* (34), *P. lamingtonensis* (35), *P. mcquillani* (36), *P. pubescens*, Barwon Heads (37), *P. pubescens*, King I. (38), and *P. pubescens*, Mt Wellington (39). Scale = 0.1 mm.



Figures 40–45. *Platycolaspis* spp. Dorsal (left) and ventral of ♀ rectum of *P. alpina* (40), *P. australis* (41), *P. lamingtonensis* (42), *P. mcquillani* (43), *P. pubescens*, Barwon Heads (44), and *P. pubescens*, Mt Wellington (45). Scale = 0.2 mm.

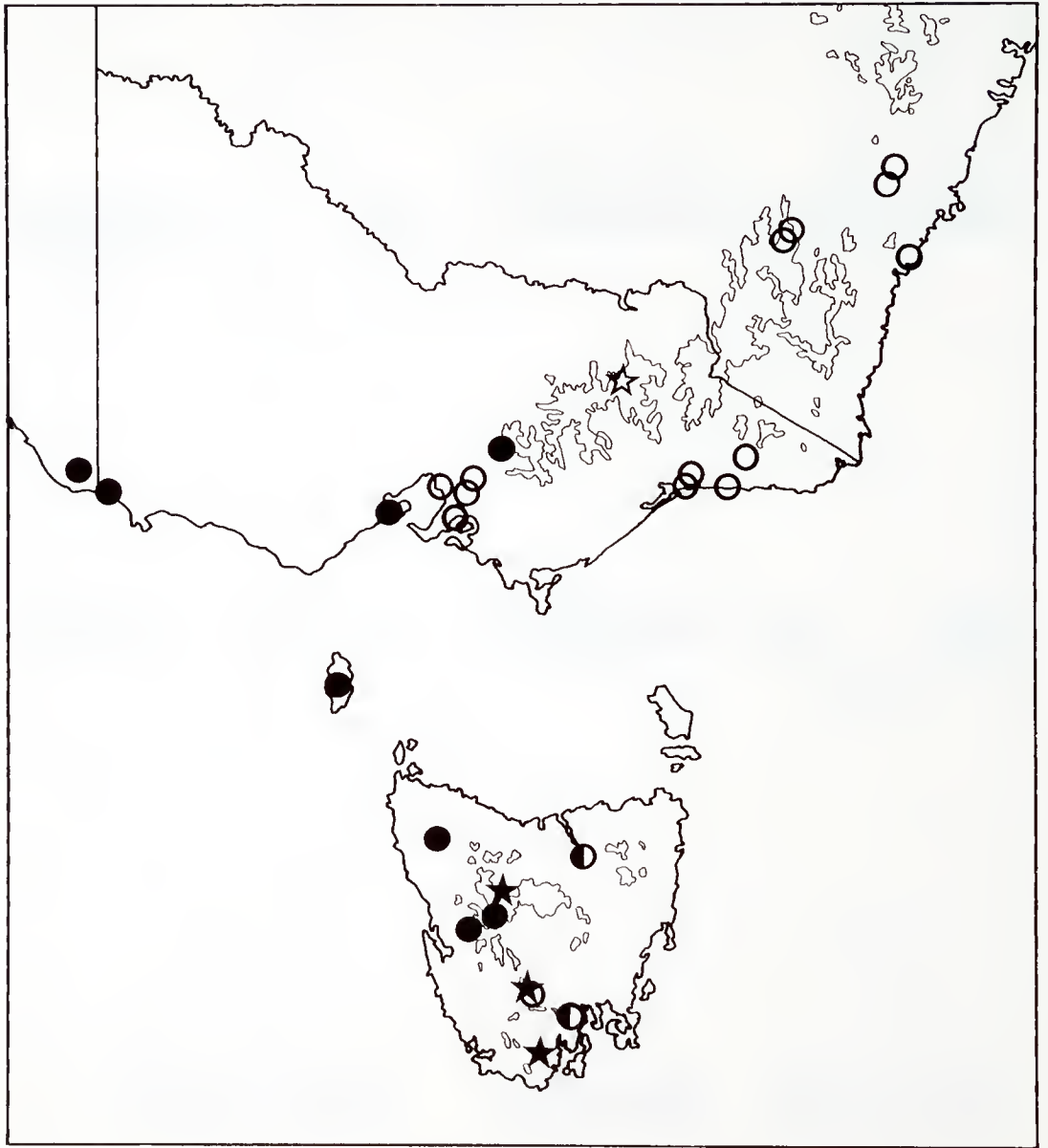


Figure 46. South-eastern Australia, showing distribution of *Platycolaspis* spp. (except *P. lamingtonensis*)
 ☆ = *P. alpina*; ○ = *P. australis*, ◐ = *P. australis* and *P. pubescens*, ★ = *P. mcquillani* and *P. pubescens*,
 ● = *P. pubescens*. Fine line = 500m contour.